



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

Aw

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/018,606

12/17/2001

Akira Okamoto

A-417

5084

802

7590

10/17/2003

DELLETT AND WALTERS
310 S.W. FOURTH AVENUE
SUITE 1101
PORTLAND, OR 97204

EXAMINER

POKER, JENNIFER A

ART UNIT

PAPER NUMBER

2832

DATE MAILED: 10/17/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/018,606

Applicant(s)

OKAMOTO ET AL.

Examiner

Jennifer A. Poker

Art Unit

2832

AW

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 June 2003.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 8.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

1. This is a second action on the merits of application filed December 17, 2001, with Amendment A submitted on June 30, 2003. Amended claims 1-24 and newly added claims 25 and 26 are pending and are being examined.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

Claims 2 and 14-16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Referring to claim 2, the applicant states, "...three of more metal layers are formed on the substrate, and the two conductors and the lead wire are formed respectively with using the metal layers the metal layers having other layers respectively therebetween." It was not understood what this claim meant. It was not understood if the conductors were formed BY the metal layers, or if the metal layers are located between the conductors. It was understood by the examiner that the conductors had layers formed between.

Referring to claim 14, the applicant states, "...it is possible to change at least one device constant of a resistor, a capacitor, and an inductor..." It was not understood what the applicant meant by this limitation. Furthermore, it was not understood what the applicant meant by "to change at least one device constant". Because claims 15 and 16 were dependant on claim 14 incorporating similar limitations, those claims were not understood.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

(a) The invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

4. Claims 1, 3, 4, 8, 12, 25, and 26 are rejected under 35 U.S.C. 102(a) as being unpatentable by U.S. Patent Number 6,144,269 to Okamoto, et al.

Regarding claims 1, 4, 8, and 25, Okamoto, et al, an inductive device, which would be easily mounted on a substrate; the device comprising:

- (1) A substrate (column 2, lines 41-42);
- (2) A first dielectric sheet (figure 1D; column 2, lines 43-58);
- (3) Spiral coil patterns formed on the substrate and on opposite surfaces of the first dielectric sheet; the spiral coils having substantially the same shape (abstract; figure 1D; column 2, lines 43-58);
- (4) The first spiral coil pattern, formed of bonding a main circuit conductor having a function of inductors (figure 1D; column 2, lines 43-58);
- (5) The second spiral coil patterns being formed from a conductive paste (column 2, lines 43-58);
- (6) A through-hole located at the center of the coil, and through a portion of the dielectric sheet (figure 1D; column 6, lines 46-48);
- (7) A connection with other patterns using a pin inserted through the through-hole (figure 1D; column 6, lines 46-48).

Art Unit: 2832

Regarding claim 3, Applicant admits on page 5, last full paragraph, and on page 6, lines 1-3, that it has been known in the art to connect two by connecting an inner end of one conductor with an outer end of another conductor in order to secure a larger inductance.

Regarding claim 12, because the first spiral coil of Okamoto, et al, has functions of inductors, it is inherent that it comprises an inductance component, and the device produced distributed capacitances (column 2, lines 49-50)

Regarding claim 26, Okamoto, et al, further discloses a grounding connection to the second spiral (column 2, lines 56-58).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 2, 13, 17, and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Number 6,144,269 to Okamoto, et al, in view of U.S. Patent Number 5,583,474 to Mizoguchi, et al.

Regarding claim 2, Okamoto, et al, discloses the claimed invention except for the metal layers.

Mizoguchi, et al, discloses a planar magnetic element comprising a semiconductor substrate a first magnetic layer arranged over the substrate, a first insulation layer arranged over the first magnetic layer, a planer coil formed of a conductor, having a plurality of turns, arranged over the

Art Unit: 2832

first insulation layer, a second insulation layer arranged over the planar coil, and a second magnetic layer arranged over the second insulation layer.

One skilled in the art, at the time the invention was made would have found it obvious to combine the teachings of Okamoto, et al, with the teachings of Mizoguchi, et al, in order to create a planar inductive device incorporating magnetic or metal layers as close to the coils as possible so that the layers may serve as cores.

Regarding claims 13 and 17, Okamoto, et al, discloses a noise filter, which is an inductive device, which would be easily mounted on a substrate; the device comprising:

- ((1)) A substrate (column 2, lines 41-42);
- (2) A first dielectric sheet (figure 1D; column 2, lines 43-58);
- (3) First and second spiral coil patterns formed on opposite surfaces of the first dielectric sheet, having substantially the same shape (abstract; figure 1D; column 2, lines 43-58);
- (4) The first spiral coil pattern, formed of bonding a main circuit conductor having a function of inductors (figure 1D; column 2, lines 43-58);
- (5) The second spiral coil patterns being formed from a conductive paste (column 2, lines 43-58).

Okamoto, et al, discloses the claimed invention except for the impedance element.

Mizoguchi, et al, discloses a planar magnetic element comprising a semiconductor substrate, first and second planar coils, which can be integrated with active elements (e.g., transistors) and passive elements (e.g., resistors and capacitors), thereby constituting a one-chip semiconductor device. In other words, they help to provide small-sized electronic devices containing inductors and transformers.

Art Unit: 2832

One skilled in the art, at the time the invention was made would have found it obvious to combine the teaching of Okamoto, et al, with the teachings of Mizoguchi, et al to create a planar inductive device incorporating resistors or capacitors (impedance elements) in order to help provide small-sized electronic devices.

Regarding claim 24, Okamoto, et al, discloses that the first spiral coil has functions of inductors; it is inherent that it comprises an inductance component, and the device produced distributed capacitances (column 2, lines 49-50).

7. Claims 5-7, 9, and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Number 6,144,269 to Okamoto, et al.

Okamoto, et al, discloses the claimed invention except for the specific shapes of the conductors. It would have been an obvious matter of design choice to utilize different shapes, since applicant has not disclosed that long shapes, circular shapes, spiral shapes, linear shapes, or meander shapes solves any stated problem or is for any particular purpose and it appears that the invention would perform equally well with any shape.

8. Claims 18-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Number 6,144,269 to Okamoto, et al, in view of U.S. Patent Number 5,583,474 to Mizoguchi, et al.

Regarding claims 18-22, Okamoto, et al, in view of Mizoguchi, et al, discloses the claimed invention except for the specific shapes of the conductors. It would have been an obvious matter of design choice to utilize different shapes, since applicant has not disclosed that long shapes, circular shapes, spiral shapes, linear shapes, or meander shapes solves any stated problem or is for any particular purpose and it appears that the invention would perform equally well with any shape.

Art Unit: 2832

9. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Number 6,144,269 to Okamoto, et al, in view of European Patent Number 0643402A2 to Naoto.

Okamoto, et al, discloses the claimed invention except for the inner end of one conductor being connected with an outer end of the other conductor.

Naoto discloses in the background of the invention that it has been known to connect the inner end of one conductor to the external end of a second conductor in order to obtain a greater total inductance.

One skilled in the art, at the time the invention was made, would have found it obvious to combine the teachings of Okamoto, et al, with the teachings of Naoto and connect the inner end of one conductor with the external end of a second conductor for the purposes of increasing total inductance.

10. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Number 6,144,269 to Okamoto, et al, in view of U.S. Patent Number 5,583,474 to Mizoguchi, et al, further in view of European Patent Number 0643402A2 to Naoto.

Okamoto, et al, in view of Mizoguchi, et al, discloses the claimed invention except for the inner end of one conductor being connected with an outer end of the other conductor.

Naoto discloses in the background of the invention that it has been known to connect the inner end of one conductor to the external end of a second conductor in order to obtain a greater total inductance.

One skilled in the art, at the time the invention was made, would have found it obvious to combine the teachings of Okamoto, et al, with the teachings of Naoto and connect the inner end of

Art Unit: 2832

one conductor with the external end of a second conductor for the purposes of increasing total inductance.

Response to Arguments

11. Applicant's arguments referring to claims 1-10, 12-22, and 24 filed June 30, 2003 have been fully considered but they are not persuasive.

(a) Regarding applicant arguments relating to Claims 1, 3, 4, 8, and 12 being rejected under 35 U.S.C. 102(a), examiner disagrees. Applicant's asserts that Claims 1, 3, 4, 8, and 12 seek to solve a different problem than that of the reference. Okamoto, however, discloses structural equivalence to that of the applicant. Okamoto disclose a substrate, spiral coil patterns having the function of inductors, formed on the substrate and insulating separated by a dielectric sheet; a through-hole located at the center of the coil, and a connection with other patterns using a pin inserted through the through-hole. A recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art. See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963).

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., filtering frequencies in the range of 130-140Mz) are not recited in the rejected claim(s). Although the

claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Applicant further argues that the applicant's invention is not stacked inductors. Applicant claims in claim 1 that the conductors are formed in piles on the substrate. *The American Heritage® Dictionary of the English Language*, defines piles as a quantity of objects stacked or thrown together in a heap, therefore examiner believes that the rejection is valid.

(b) In response arguments referring to claim 2, applicant asserts that the invention can be constructed on a very small scale on a substrate such as silicon, using etching & deposition methods such as lithography methods. It is noted that these features upon which applicant relies are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Applicant further argues that there is no obvious grounds to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, Okamoto, et al, discloses the claimed invention except for the metal layers. Whereas Mizoguchi, et al, discloses a planar magnetic element comprising a semiconductor substrate a first magnetic layer arranged over the substrate, a first insulation layer arranged over the first magnetic layer, a planer coil formed of a conductor, having a plurality of turns, arranged over the first insulation layer, a second insulation layer arranged

Art Unit: 2832

over the planar coil, and a second magnetic layer arranged over the second insulation layer.

It would have been obvious to one having ordinary skill in the art, at the time the invention was made to combine the teachings of Okamoto, et al, with the teachings of Mizoguchi, et al, in order to create a planar inductive device incorporating magnetic or metal layers as close to the coils as possible so that the layers may serve as cores.

(c) Referring to claims 13, 17, and 24, applicant illustrates no argument aside from asserting that the claims are neither shown nor suggested by the combination of documents in the rejections. Applicant neglected to discuss the subject matter. Art rejection is maintained. See previous pages.

(d) In response to applicant's arguments referring to claims 5-7, 9, 10, 18-22, applicant asserts that the prior art does not show conductors connected as claimed in any shape. Examiner maintains the case law rejection of obviousness. It would have been an obvious matter of design choice to utilize different shapes. Applicant has not, anywhere in the discloses, disclosed that long shapes, circular shapes, spiral shapes, linear shapes, or meander shapes solves any stated problem or is for any particular purpose. It appears that the invention would perform equally well with any shape.

12. Applicant's arguments referring to claims 11 and 23 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, due to the submission of the IDS on June 30th along with the amendment, a new ground(s) of rejection is made in view of. See above noted rejections.

Further arguments are addressed below:

(1) Objection to the specification (abstract) is withdrawn;

Art Unit: 2832

- (2) Objections to claims 1, 15, and 16 are withdrawn;
- (3) Rejections under 35 U.S.C 112 to claims 2, 3, 8, 13, and 14 are withdrawn;
- (4) Rejections under 35 U.S.C 112 to claims 1, 15, and 16 are maintained.

Conclusion

13. Applicant's submission of an information disclosure statement under 37 CFR 1.97(c) with the fee set forth in 37 CFR 1.17(p) on June 30, 2003 prompted the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 609(B)(2)(i). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer A. Poker whose telephone number is 703-305-4037. The examiner can normally be reached on 10:00-8:30 Monday-Thursday.

Art Unit: 2832

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Elvin G. Enad can be reached on 703-308-7619. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1782.

jap
October 9, 2003

292
LINCOLN DONGYAN
PRIMARY EXAMINER
GROUP 2109